Complete Summary

GUIDELINE TITLE

Management of suspected bacterial urinary tract infection in adults. A national clinical guideline.

BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Management of suspected bacterial urinary tract infection in adults. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2006 Jul. 40 p. (SIGN publication; no. 88). [143 references]

GUIDELINE STATUS

This is the current release of the guideline.

Any amendments to the guideline in the interim period will be noted on Scottish Intercollegiate Guidelines Network (SIGN) Web site.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse (NGC): This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- July 08, 2008, Fluoroquinolones (ciprofloxacin, norfloxacin, ofloxacin, levofloxacin, moxifloxacin, gemifloxacin): A BOXED WARNING and Medication Guide are to be added to the prescribing information to strengthen existing warnings about the increased risk of developing tendinitis and tendon rupture in patients taking fluoroquinolones for systemic use.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Urinary tract infection (UTI)

Note: This guideline does not address prophylaxis to prevent UTI after instrumentation or surgery, or treatment of recurrent UTI.

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine
Urology

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Nurses
Patients
Physician Assistants

GUIDELINE OBJECTIVE(S)

To provide recommendations based on current evidence for best practice in the management of adults with community acquired urinary tract infection (UTI)

TARGET POPULATION

Adult women (including pregnant women) and men of all ages, patients with catheters, and patients with comorbidities such as diabetes

This guideline is not intended for use in the following populations:

- Children
- Patients with hospital acquired infection

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Exploration of alternative diagnosis and pelvic examination in women with symptoms of vaginal itch or discharge
2. Use of dipstick testing to diagnose women with limited urinary tract infection (UTI) symptoms and signs
3. Use of urine culture to guide change of antibiotic when the patient does not respond to the first antibiotic
4. Use of urine culture to test for bacteriuria in pregnant women

Note: The following diagnosis/evaluation interventions were considered but not recommended:

- Examination of appearance of urine
- Urine microscopy in clinical settings in primary or secondary care
- Dipstick testing in elderly patients (over 65 years of age) and for screening for bacterial UTI in pregnant women at antenatal visits
- Repeat urine cultures in pregnant women who do not have bacteriuria in the first trimester
- Use of clinical symptoms or signs for predicting the likelihood of symptomatic UTI in catheterised patients
- Laboratory microscopy or dipstick testing for diagnosis of UTI in catheterised patients
- Screening of women with asymptomatic bacteriuria after short term catheterisation

Management/Treatment

1. Treatment of women (including pregnant women) and men with symptoms or signs of UTI with an antibiotic
2. Treatment of pregnant women with asymptomatic bacteriuria with an antibiotic
3. Use of cranberry products to reduce the frequency of UTI recurrence
4. Use of methenamine hippurate to prevent symptomatic UTI in patients without known upper renal tract abnormalities
5. Referral for urological investigation of men with symptoms of upper urinary tract infection (UUTI), who do not respond to antibiotics, or who have recurrent UTI

Note: The following management/treatment interventions were considered but not recommended:

- Quinolones for empirical treatment of lower urinary tract infection (LUTI)
- Nitrofurantoin or trimethoprim for UUTI
- Treatment of asymptomatic bacteria in non-pregnant women, elderly women or men (over 65 years of age), or catheterised patients
- Cranberry products for treatment of symptomatic episodes of UTI
- Oestrogens for routine prevention of recurrent UTI in postmenopausal women
- Antibiotic prophylaxis for prevention of symptomatic UTI in catheterised patients

MAJOR OUTCOMES CONSIDERED

- Symptoms from urinary tract infection (UTI)
- Adverse treatments effects
- Recurrence of symptoms
- Development of symptoms in asymptomatic UTI patients

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence base for this guideline was synthesised in accordance with the Scottish Intercollegiate Guidelines Network (SIGN) methodology. A systematic review of the literature was carried out using an explicit search strategy devised by the SIGN Information Officer in collaboration with members of the guideline development group. Literature searches were initially conducted in Medline, Embase, Cinahl, and the Cochrane Library using the year range 1994-2002. The literature search was extended from 1966-2003 for randomized clinical trials (RCTs) and diagnostic studies. The National Economic Evaluation Database (NEED) was searched for economic studies to cover the period up to January 2004. Key websites on the Internet were also searched. These searches were supplemented by the reference lists of relevant papers and group members' own files. The Medline version of the main search strategies can be found on the SIGN website.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

1++: High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias

1+: Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias

1-: Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias

2++: High quality systematic reviews of case control or cohort studies
High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+: Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2-: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3: Non-analytic studies (e.g. case reports, case series)

4: Expert opinion

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Once papers have been selected as potential sources of evidence, the methodology used in each study is assessed to ensure its validity. The result of this assessment will affect the level of evidence allocated to the paper, which will in turn influence the grade of recommendation that it supports.

The methodological assessment is based on a number of key questions that focus on those aspects of the study design that research has shown to have a significant influence on the validity of the results reported and conclusions drawn. These key questions differ between study types, and a range of checklists is used to bring a degree of consistency to the assessment process. Scottish Intercollegiate Guidelines Network (SIGN) has based its assessments on the MERGE (Method for Evaluating Research and Guideline Evidence) checklists developed by the New South Wales Department of Health, which have been subjected to wide consultation and evaluation. These checklists were subjected to detailed evaluation and adaptation to meet SIGN's requirements for a balance between methodological rigour and practicality of use.

The assessment process inevitably involves a degree of subjective judgment. The extent to which a study meets a particular criterion (e.g., an acceptable level of loss to follow up) and, more importantly, the likely impact of this on the reported results from the study will depend on the clinical context. To minimise any potential bias resulting from this, each study must be evaluated independently by at least two group members. Any differences in assessment should then be discussed by the full group. Where differences cannot be resolved, an independent reviewer or an experienced member of SIGN Executive staff will arbitrate to reach an agreed quality assessment

Evidence Tables

Evidence tables are compiled by SIGN executive staff based on the quality assessments of individual studies provided by guideline development group members. The tables summarise all the validated studies identified from the systematic literature review relating to each key question. They are presented in a standard format to make it easier to compare results across studies, and will present separately the evidence for each outcome measure used in the published studies. These evidence tables form an essential part of the guideline development record and ensure that the basis of the guideline development group's recommendations is transparent.

Additional details can be found in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50]), available from the SIGN Web site.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Synthesising the Evidence

Guideline recommendations are graded to differentiate between those based on strong evidence and those based on weak evidence. This judgment is made on the basis of an (objective) assessment of the design and quality of each study and a (perhaps more subjective) judgment on the consistency, clinical relevance and external validity of the whole body of evidence. The aim is to produce a recommendation that is evidence-based, but which is relevant to the way in which health care is delivered in Scotland and is therefore implementable.

It is important to emphasise that the grading does not relate to the importance of the recommendation, but to the strength of the supporting evidence and, in particular, to the predictive power of the study designs from which that data was obtained. Thus, the grading assigned to a recommendation indicates to users the likelihood that, if that recommendation is implemented, the predicted outcome will be achieved.

Considered Judgment

It is rare for the evidence to show clearly and unambiguously what course of action should be recommended for any given question. Consequently, it is not always clear to those who were not involved in the decision making process how guideline developers were able to arrive at their recommendations, given the evidence they had to base them on. In order to address this problem, SIGN has introduced the concept of considered judgment.

Under the heading of considered judgment, guideline development groups summarise their view of the total body of evidence covered by each evidence table. This summary view is expected to cover the following aspects:

- Quantity, quality, and consistency of evidence
- Generalisability of study findings
- Directness of application to the target population for the guideline
- Clinical impact (i.e., the extent of the impact on the target patient population, and the resources needed to treat them)
- Implementability (i.e., how practical it would be for the NHS in Scotland to implement the recommendation)

Guideline development groups are provided with a pro forma in which to record the main points from their considered judgment. Once they have considered these issues, the group is asked to summarise their view of the evidence and assign a level of evidence to it, before going on to derive a graded recommendation.

Additional detail about SIGN's process for formulating guideline recommendations is provided in Section 6 of the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50], available from the SIGN Web site.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendation

Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.

A: At least one meta-analysis, systematic review of randomized controlled trials (RCTs), or RCT rated as 1++ and directly applicable to the target population; *or*

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results

B: A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 1++ or 1+

C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 2++

D: Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group

COST ANALYSIS

A review of the cost effectiveness of treatment of urinary tract infection (UTI) in primary care is available in the original guideline document.

A review of the cost effectiveness of the following are available in *Supplementary material supporting SIGN 88: Management of suspected bacterial urinary tract infection in adults* (see "Availability of Companion Documents" field):

- Use of cranberry products for preventing UTI in non-pregnant women
- Screening of pregnant women
- Screening for asymptomatic bacteriuria in catheterised patients

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The national open meeting is the main consultative phase of Scottish Intercollegiate Guidelines Network (SIGN) guideline development.

Peer Review

All SIGN guidelines are reviewed in draft form by independent expert referees, who are asked to comment primarily on the comprehensiveness and accuracy of interpretation of the evidence base supporting the recommendations in the guideline. A number of general practitioners (GPs) and other primary care practitioners also provide comments on the guideline from the primary care perspective, concentrating particularly on the clarity of the recommendations and their assessment of the usefulness of the guideline as a working tool for the primary care team. The draft is also sent to a lay reviewer in order to obtain comments from the patient's perspective. The comments received from peer reviewers and others are carefully tabulated and discussed with the chairman and with the guideline development group. Each point must be addressed and any changes to the guideline as a result noted or, if no change is made, the reasons for this recorded.

As a final quality control check prior to publication, the guideline and the summary of peer reviewers' comments are reviewed by the SIGN Editorial Group for that guideline to ensure that each point has been addressed adequately and that any risk of bias in the guideline development process as a whole has been minimised. Each member of the guideline development group is then asked formally to approve the final guideline for publication.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the Scottish Intercollegiate Guidelines Network (SIGN) and National Guideline Clearinghouse (NGC)*: In addition to these evidence-based*

recommendations, the guideline development group also identifies points of best clinical practice in the full-text guideline document.

The grades of recommendations (A–D) and levels of evidence (1++, 1+, 1-, 2++, 2+, 2-, 3, 4) are defined at the end of the "Major Recommendations" field.

Management of Urinary Tract Infection (UTI) in Adult Women

Diagnosis

C - In otherwise healthy women presenting with symptoms or signs of urinary tract infection (UTI), empirical treatment with an antibiotic should be considered.

C - In women with symptoms of vaginal itch or discharge, explore alternative diagnoses and consider pelvic examination.

Near Patient Testing

Dipstick Tests

B - Dipstick tests should only be used to diagnose bacteriuria in women with limited symptoms and signs (no more than two symptoms).

- Women with limited symptoms of UTI who have negative dipstick urinalysis (leucocyte esterase or nitrite) should be offered empirical antibiotic treatment.
- The risks and benefits of empirical treatment should be discussed with the patient and managed accordingly.
- If a woman remains symptomatic after a single course of treatment, she should be investigated for other potential causes

Antibiotic Treatment

Symptomatic Bacteriuria, Lower Urinary Tract Infection (LUTI)

A - Non-pregnant women with symptoms or signs of acute LUTI, and either high probability of or proven bacteriuria, should be treated with antibiotics.

B - Non-pregnant women of any age with symptoms or signs of acute LUTI should be treated with trimethoprim or nitrofurantoin for three days.

D - Women with LUTI, who are prescribed nitrofurantoin, should be advised not to take alkalinising agents (such as potassium citrate).

B - Patients who do not respond to trimethoprim or nitrofurantoin should have urine taken for culture to guide change of antibiotic.

Symptomatic Bacteriuria, Upper Urinary Tract Infection (UUTI)

A - Non-pregnant women with symptoms or signs of acute UUTI should be treated with ciprofloxacin for seven days.

D - Urine should be taken for culture before immediate empirical treatment is started and treatment changed if there is an inadequate response to the antibiotic.

Asymptomatic Bacteriuria

A - Non-pregnant women with asymptomatic bacteriuria should not receive antibiotic treatment.

A - Elderly women (over 65 years of age) with asymptomatic bacteriuria should not receive antibiotic treatment.

Non-Antibiotic Treatment

Cranberry Products

A - Women with recurrent UTI should be advised to take cranberry products to reduce the frequency of recurrence.

D - Patients taking warfarin should avoid taking cranberry products unless the health benefits are considered to outweigh any risks.

Methenamine Hippurate

B - Methenamine hippurate may be used to prevent symptomatic UTI in patients without known upper renal tract abnormalities.

Oestrogen

A - Oestrogens are not recommended for routine prevention of recurrent UTI in postmenopausal women.

Management of Bacterial UTI in Pregnant Women

Diagnosis

Near Patient Testing

A - Standard quantitative urine culture should be performed routinely at first antenatal visit.

A - The presence of bacteriuria in urine should be confirmed with a second urine culture.

A - Dipstick testing should not be used to screen for bacterial UTI at first or subsequent antenatal visits.

Antibiotic Treatment

Symptomatic Bacteriuria

B - Pregnant women with symptomatic UTI should be treated with an antibiotic.

Asymptomatic Bacteriuria

A - Asymptomatic bacteriuria detected during pregnancy should be treated with an antibiotic.

Screening During Pregnancy

C - Women with bacteriuria confirmed by a second urine culture should be treated and have repeat urine culture at each antenatal visit until delivery.

Management of Bacterial UTI in Adult Men

Antibiotic Treatment

Symptomatic Bacteriuria

C - Bacterial UTI in men should be treated empirically with a two week course of quinolone.

Asymptomatic Bacteriuria

A - Elderly men (over 65 years of age) with asymptomatic bacteriuria should not receive antibiotic treatment.

Referral

D - Men should be referred for urological investigation if they have symptoms of upper urinary tract infection (UUTI), fail to respond to appropriate antibiotics, or have recurrent UTI.

Management of Bacterial UTI in Patients with Catheters

Diagnosis

D - Clinical symptoms or signs are not recommended for predicting the likelihood of symptomatic UTI in catheterised patients.

Near Patient Testing

Urine Microscopy

C - Laboratory microscopy should not be used to diagnose UTI in catheterised patients.

Dipstick Tests

B - Dipstick testing should not be used to diagnose UTI in catheterised patients.

Antibiotic Prophylaxis to Prevent Catheter Related UTI

A - Antibiotic prophylaxis is not recommended for the prevention of symptomatic UTI in catheterised patients.

Antibiotic Treatment

Symptomatic Bacteriuria

B - Patients with long term indwelling catheters should have the catheter changed before starting antibiotic treatment for symptomatic UTI.

Asymptomatic Bacteriuria

B - Screening of women with asymptomatic bacteriuria after short term catheterization is not recommended.

B - Catheterised patients with asymptomatic bacteriuria should not receive antibiotic treatment.

Definitions:

Levels of Evidence

1++: High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias

1+: Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias

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2++: High quality systematic reviews of case control or cohort studies
High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+: Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2-: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3: Non-analytic studies (e.g. case reports, case series)

4: Expert opinion

Grades of Recommendation

Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.

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Extrapolated evidence from studies rated as 1++ or 1+

C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 2++

D: Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group

CLINICAL ALGORITHM(S)

The following clinical algorithms are provided in Annexes 1-4 of the original guideline document and in the *Management of Suspected Bacterial Urinary Tract Infection in Adults Quick Reference Guide* (see the "Availability of Companion Documents" field):

- Management of suspected lower urinary tract infection (LUTI) in women (not pregnant)
- Management of suspected upper urinary tract infection (UUTI) in women (not Pregnant)
- Management of suspected LUTI in pregnant women
- Management of suspected urinary tract infection (UTI) in adult men

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Relief of symptoms from urinary tract infection (UTI)
- Prevention of adverse treatments effects
- Prevention of UTI recurrence
- Prevention of symptom development in asymptomatic UTI patients

POTENTIAL HARMS

Adverse effects of antibiotic treatment

CONTRAINDICATIONS

CONTRAINDICATIONS

- Women with renal impairment should not be treated with nitrofurantoin.
- Women with lower urinary tract infection (LUTI), who are prescribed nitrofurantoin, should be advised not to take alkalinising agents (such as potassium citrate).
- Given some antibiotics are toxic in pregnancy, refer to the British National Formulary (BNF) for contraindications, available at www.bnf.org.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline is not intended to be construe d or to serve as a standard of care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the appropriate healthcare professional in light of the clinical data presented by the patient and the diagnostic and treatment options available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation of national clinical guidelines is the responsibility of local National Health Service (NHS) organizations and is an essential part of clinical governance. It is acknowledged that not every guideline can be implemented immediately on

publication, but mechanisms should be in place to ensure that the care provided is reviewed against the guideline recommendations and the reasons for any differences assessed and, where appropriate, addressed. These discussions should involve both clinical staff and management. Local arrangements may then be made to implement the national guideline in individual hospitals, units and general practices, and to monitor compliance. This may be done by a variety of means including patient-specific reminders, continuing education and training, and clinical audit. Implementing the new general practice contract will provide opportunities to introduce such elements of good practice.

Key points for implementation and audit are identified in the original guideline document.

IMPLEMENTATION TOOLS

Audit Criteria/Indicators
Clinical Algorithm
Quick Reference Guides/Physician Guides

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Management of suspected bacterial urinary tract infection in adults. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2006 Jul. 40 p. (SIGN publication; no. 88). [143 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Jul

GUIDELINE DEVELOPER(S)

Scottish Intercollegiate Guidelines Network - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

Scottish Executive Health Department

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Declarations of interests were made by all members of the guideline development group. Further details are available from the Scottish Intercollegiate Guidelines Network (SIGN) Executive.

GUIDELINE STATUS

This is the current release of the guideline.

Any amendments to the guideline in the interim period will be noted on Scottish Intercollegiate Guidelines Network (SIGN) Web site.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Quick reference guide: Management of suspected bacterial urinary tract infection in adults. Scottish Intercollegiate Guidelines Network, 2006 Jul. 2 p. Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.
- SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network. (SIGN publication; no. 50). Available from the SIGN Web site.
- Appraising the quality of clinical guidelines. The SIGN guide to the AGREE (Appraisal of Guidelines Research & Evaluation) guideline appraisal instrument. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001. Available from the SIGN Web site.
- Supplementary material supporting: Management of suspected bacterial urinary tract infection in adults. Scottish Intercollegiate Guidelines Network, 2006 Jul. 12 p. Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.
- Audit of the recommendations can be found in the original guideline document

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on November 20, 2006. This summary was updated by ECRI Institute on July 28, 2008 following the U.S. Food and Drug Administration advisory on fluoroquinolone antimicrobial drugs.

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